

Developments in Marketing Spreads for Agricultural Products in 1976

**U.S. Department of Agriculture
Economic Research Service
Agricultural Economic Report No. 367**

ABSTRACT

Larger food supplies and an easing of inflationary forces greatly slowed the rise in food prices in 1976. The retail cost of a market basket of farm foods averaged only 1 percent higher than in 1975. All of the increase was accounted for by an increase of 5 percent in the farm-retail price spread, representing the charges for processing and distribution. The 1976 increase in the marketing spread was the smallest in several years, due in part to a slower rise in the costs of some marketing inputs, such as food containers.

Returns to farmers for food products declined about 4 percent in 1976, mainly due to lower livestock prices. Farmers received an average of 40 cents of each dollar spent by consumers for farm foods in 1976--2 cents less than in 1975.

KEYWORDS: Price spreads, food marketing, costs.

CONTENTS

	<u>Page</u>
Summary	iv
Introduction	1
Review of Food Prices	2
Farm-Retail Price Spreads	4
Components of Farm-Retail Price Spreads	7
Marketing Costs	10
Productivity	13
Profits	14
Commodity Highlights.....	17
Beef and Pork	17
Eggs and Poultry	20
Milk	22
Butter	22
Fruits and Vegetables	23
White Pan Bread	24
Vegetable Oil Products	25
The Marketing Bill.....	27
Labor	30
Food Containers and Packaging	31
Capital Costs	31
Transportation Costs.....	32
Energy Costs.....	33
Advertising Costs.....	33
Corporate Profits	34
References	35

SUMMARY

Average prices paid by consumers for food products in grocery stores were relatively stable during 1976, in sharp contrast to the rapid increases during the previous 3 years. The retail cost of a market basket of farm foods (which excludes imported foods and seafoods) averaged only 1 percent higher than for 1975. Prices of imported foods, such as coffee and fishery products, rose faster than foods produced domestically. Therefore, grocery store prices overall averaged about 2 percent higher than in 1975. In contrast to grocery prices, prices for restaurant meals jumped about 7 percent last year. Thus, all food prices were up an average 3.1 percent over 1975.

A large crop harvest and expanding supplies of meat and poultry products helped the most to steady food prices. In addition, increases in marketing costs were smaller than in other recent years. For the second year in succession, food prices rose at a slower rate than other consumer prices, thereby holding down the rise in living costs.

Larger production resulted in lower farm prices for many food commodities during 1976. The farm value of the market basket of foods averaged 4.4 percent lower than for 1975, mainly because of lower prices for beef cattle and hogs. Returns for most grain-based foods, such as bakery and cereal products, and vegetable oil products also declined reflecting the large grain harvest. In contrast, producers received higher returns for dairy products. In 1976, the farm value of food products accounted for 40 percent of the retail cost of these foods, compared with 42 percent in 1975.

The entire increase in food costs last year came from higher marketing charges. The farm-to-retail price spread widened 5 percent. However, this increase was about half as large as the increase in 1975, and was about the same as the increase in the general price level. Among major food items, farm-retail price spreads increased most for beef and pork as prices for cattle and hogs declined more than retail meat prices. The farm-retail price spread widened 8 cents per pound for both beef and pork during 1976.

Costs of some marketing inputs rose at a slower rate in 1976 as inflation moderated throughout the economy, but most input prices showed substantial increases. Prices averaged about 9 percent higher for packaging materials and energy. Hourly earnings of food marketing employees advanced about 8 percent.

A study of components of price spreads for 16 foods showed wide variation in costs of marketing functions among products. Processing costs were found to be less than 15 percent of the retail price for meat, poultry, and dairy products, but around half the retail price of canned tomatoes. Retailing costs were found to be highest for perishable products, averaging about two-fifths of the retail price of fresh oranges and lettuce--about double the overall retail store margin. Among individual cost items, labor was the largest cost for retailing and processing most products, followed by packaging costs.

As a result of increased consumption and higher prices, consumer expenditures for food from U.S. farms rose about 3 percent in 1976 to an estimated \$164 billion. Farmers' received \$54 billion of this, about \$1 billion less than in 1975. The remaining \$110 billion paid the food marketing bill, representing total charges for transporting, processing, and distributing farm foods. The bill was \$6 billion more than in 1975. Most of this increase was in labor, packaging, and transportation costs. Profits earned by firms from marketing farm foods also increased in 1976 as a result of increased sales and improved profit rates. Profit rates after taxes for food manufacturers, which have been on an upward trend for several years, averaged 3.6 percent of sales and 15.5 percent of stockholders' equity for the first 9 months of 1976. Profits of large food chains averaged 0.7 percent of sales and 9.2 percent of stockholders' equity during this same period.

DEVELOPMENTS IN MARKETING SPREADS FOR AGRICULTURAL PRODUCTS IN 1976*

INTRODUCTION

Consumers and farmers have a continuing interest in information relating to the performance of the food marketing system. It is not easy for consumers to observe how the complex marketing system operates or to understand what the food dollar pays for. It is also difficult for farmers to understand the difference between the amount he receives for his products and the amount the consumer pays for foodstuffs. In public discussions concerning the level and change in food prices, a number of recurring issues arise:

- Are farm-retail price spreads increasing more rapidly than the costs of performing marketing functions?
- What is the farm value of food relative to the costs of marketing products after products leave the farm?
- Are food prices changing at the same time and by the same amount at all levels of the market?
- What processing and distribution charges make up the difference between the retail and farm value of food?
- Are profits of food retailers and processors increasing?
- Have food marketing firms become more efficient in performing marketing functions?
- How much of the food dollar pays for the retailing and processing function or particular costs, such as labor and packaging?

In this report a number of statistical series and analyses are presented that shed light on these questions. Four types of data are currently published by the Economic Research Service that are a useful starting point for evaluating the food industry performance. These are (1) farm-retail price spreads for a market basket of food, (2) consumer expenditures and the marketing bill for food, (3) cost and profit components of farm-retail spreads for selected foods, and (4) costs of inputs, profits, and productivity of food marketing firms. These data and analyses are presented in the following sections.

* This report was prepared by Denis Dunham, NEAD, ERS. Contributions were made by T.Q. Hutchinson, NEAD, and Donald Agnew, Kenneth Blase, Charles Shaw, William Jones, Alfred Burns, James Driscoll, and Harry Doty, CED, ERS.

REVIEW OF FOOD PRICES

Food prices, like prices of most other goods and services, have risen sharply since 1972 at all market levels. This has been largely the result of erratic domestic and foreign food production, persistent inflationary pressures, and rising consumer demand. Food prices and expenditures have risen at rates several times greater than historical averages. In December 1976, the Consumer Price Index for all food was nearly 50 percent higher than in 1972. Food expenditures have risen from \$130 billion to about \$200 billion during the past 4 years.

Although food prices have been rising, the past several years have been difficult for food processors and retailers. After years of steady growth during the sixties, food consumption began to plateau during the early seventies. In 1973 and 1975, food consumption declined slightly. Estimated per capita consumption in 1976 was only a half-percent greater than in 1971. This leveling off of consumption and industry growth resulted in large part from a reduction in the birth rate and shifts in basic consumption patterns that occurred as food prices rose. In 1974 and 1975, consumer expenditures for food increased as a proportion of personal income for the first time in many years. Also contributing to the problems of the food industry in recent years was the imposition of price controls in 1971, rapid inflation that caused costs to rise, and the recent recession. Throughout this period, food industry profit margins, particularly for retailers, were under considerable pressure from rising operating costs. More importantly, very little gain occurred in productivity to offset spiraling costs of materials and labor, which resulted in higher prices at food stores.

In 1976, larger food supplies and an easing of inflationary forces greatly slowed the rise in retail food prices. For the second year in succession, food prices rose at a slower rate than other consumer prices, thereby holding down the rise in living costs. The retail cost of a market basket of farm foods averaged only 1 percent higher than in 1975. This rise compared with an increase of more than 7 percent from 1974 to 1975, and was the smallest year-to-year increase since 1971 (table 1). Helping most to steady retail prices were larger supplies and lower farm prices for beef cattle, hogs, and poultry. Retail Choice beef prices declined an average of 7 cents per pound. Consumers reacted to the drop by consuming a record 129 pounds of beef per person--9 pounds more than in 1975.

Prices of imported foods, such as coffee and fishery products, rose slightly faster than foods produced domestically. Therefore, grocery store prices overall averaged about 2 percent higher last year than in 1975. The fastest rising food prices last year were restaurant meals, which jumped about 7 percent.

While consumer food prices were relatively stable during 1976, farmers were getting less for most products than a year earlier. Farm value, a measure of returns to farmers for food products, declined over 4 percent last year-- the first year-to-year decline in the farm value of food products since 1970. Livestock-related products took the sharpest fall as supplies outpaced demand. As a result of falling prices, the farmer's share of the consumer's dollar in

Table 1--The market basket of farm foods: Retail cost, farm value, farm-retail spread, and farmer's share of the retail cost 1/

Year and quarter	Retail cost	Farm value	Farm-retail spread	Farmer's share
	<u>1967 = 100</u>			<u>Percent</u>
1965	96.0	99.2	93.9	40
1966	101.0	106.3	97.8	41
1967	100.0	100.0	100.0	39
1968	103.6	105.3	102.5	39
1969	109.1	114.8	105.5	41
1970	113.7	114.1	113.4	39
1971	115.7	114.4	116.6	38
1972	121.3	125.0	119.0	40
1973	142.3	167.2	126.5	46
1974	161.9	178.3	151.5	43
1975	173.6	187.1	165.1	42
1976 <u>2/</u>	175.4	178.8	173.2	40
<u>1975</u>				
I	168.8	173.2	166.1	40
II	170.1	182.9	161.9	42
III	177.6	199.8	163.4	44
IV	177.9	192.3	168.8	42
<u>1976</u>				
I	176.7	183.5	172.5	40
II	175.3	183.1	170.4	41
III	176.0	179.1	174.1	39
IV	173.5	169.5	176.0	38

1/ The market basket contains the average quantities of farm foods purchased annually per household, but excludes imported foods and seafoods. The quantities of foods are based on consumer expenditures in 1960-61, and are held constant to estimate price changes. Retail cost is calculated from retail prices published by the Bureau of Labor Statistics. The farm value is the gross return to farmers for the farm products equivalent to foods in the market basket. The spread between the retail cost and farm value is an estimate of the gross margin received by marketing firms for assembling, processing, transporting, and distributing the products. Indexes may be converted to dollar totals by multiplying by the following amounts for 1967; retail cost, \$1,080.64; farm value, \$419.07; and farm-retail spread, \$661.57. The dollar amounts represent what the foods in the 1960-61 market basket would cost in a particular year. 2/ Preliminary.

1976 declined. The average for the year was about 40 cents. This proportion was 2 cents less than in 1975.

FARM-RETAIL PRICE SPREADS

Separation of the consumer's food dollar into a portion covering processing and distribution charges and another portion going to farmers gives a first indication of where to look for an explanation of changes in retail food prices.

The farm-retail price spread is the difference between the price paid for a food product by consumers and the value of the farm product equivalent to the retail unit. It measures the assembling, processing, transporting, and retailing charges that are added to the value of the farm product. The spread is sometimes called the gross marketing margin or charge since it is the total amount received by marketing firms. The spread consists of all costs and profits.

Price spreads are computed monthly for a group of foods called the market basket, and for each of the 65 individual foods in the basket (1).^{1/} They are computed largely from retail prices published by the Bureau of Labor Statistics (BLS), and farm prices reported by the USDA Statistical Reporting Service (SRS) and Market News Service (MNS).

In measuring price spreads, the unit purchased by the consumer is used to trace the product through the marketing system. Therefore, a farm value must be determined for the quantity of farm product going into the item purchased by consumers. This quantity is usually larger than the retail unit because of byproducts and losses that occur in processing and marketing. For example, to calculate the farm-retail price spread for beef, the retail price of 1 pound of Choice beef is compared with the farm value of 2.28 pounds of live animal.

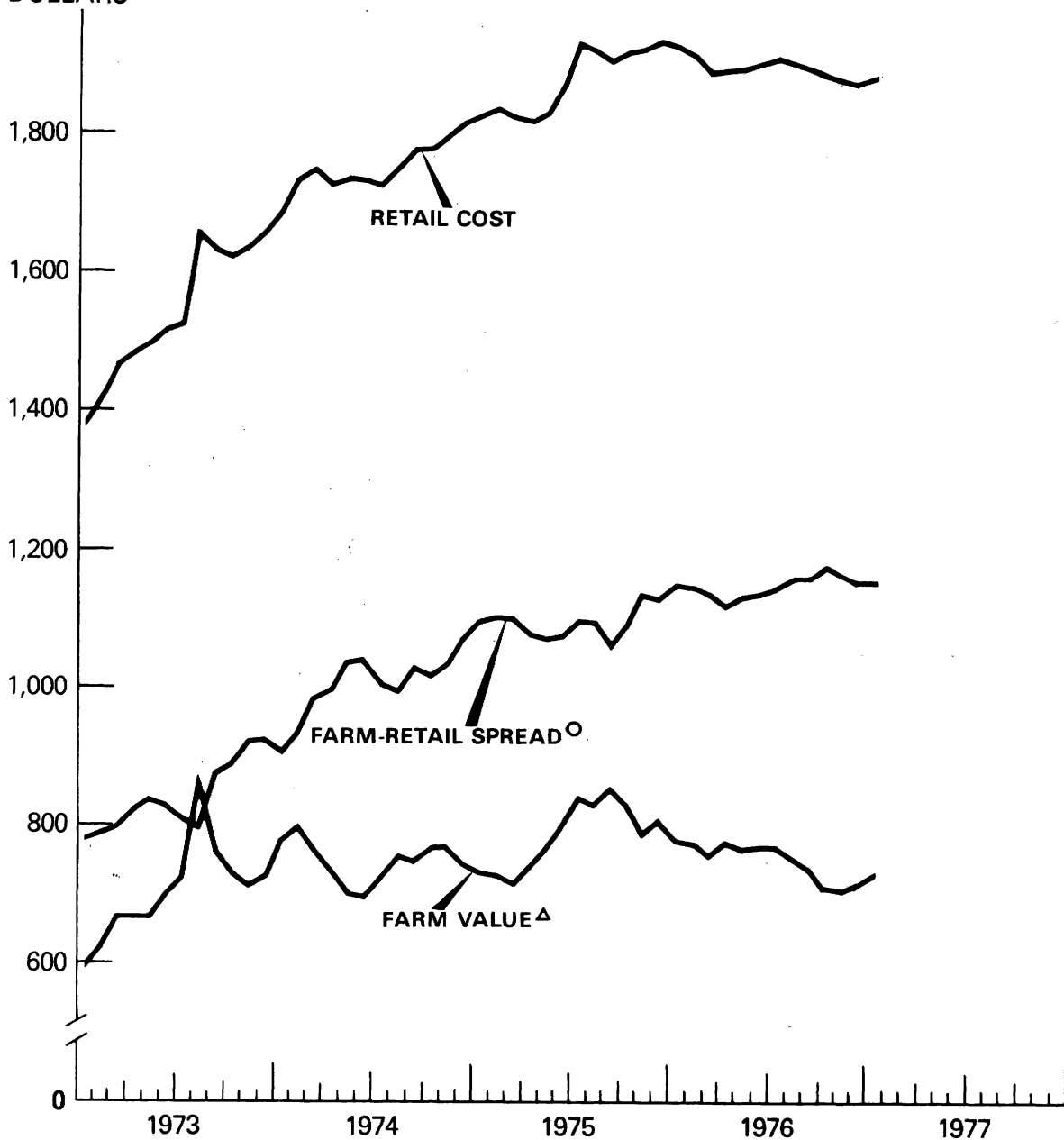
Higher farm-retail price spreads accounted for the small rise in the retail cost of farm foods in 1976. The overall marketing spread for the market basket foods averaged 5 percent higher last year than in 1975. This increase was well below the increases of the previous 2 years, and slightly below the rate of inflation for other goods and services in 1976. The more moderate increase in marketing spreads last year reflects the easing of inflationary forces in the economy which slowed the rise in costs of some marketing inputs, such as packaging materials.

Year-to-year changes in price spreads and retail food costs have been much different from longer term changes. During the past 6 years, movements in farm-retail price spreads and retail food costs have been quite similar. Since 1970, the annual retail cost of the market basket of foods has risen slightly over 50 percent, or from a dollar value of \$1,228 to \$1,895. Increases also have occurred in the marketing spread each year during this period. The value of the spread rose from \$751 in 1970 to \$1,146 last year--almost an identical percentage increase as for the retail cost. Although farm

^{1/} Underscored numbers in parentheses refer to references listed at the end of the report.

MARKET BASKET OF FARM FOODS

DOLLARS*



* ANNUAL RATE PER HOUSEHOLD FOR MARKET BASKET OF FARM FOODS.

○ GROSS MARGIN RECEIVED BY MARKETING FIRMS FOR ASSEMBLING, PROCESSING, TRANSPORTING, AND DISTRIBUTING.

△ GROSS RETURN TO FARMERS FOR EQUIVALENT AMOUNTS OF FARM FOODS.

Figure 1

value declined last year, returns to producers for food products have kept up with rising market charges, averaging slightly over 50 percent higher last year than in 1970 (fig. 1).

As a consequence of the similar increases in these two components of retail food costs--farm value and marketing charges--the distribution of the food dollar for the two years was unchanged. The distribution consisted of about 40 percent for production of the raw food products and 60 percent for marketing services. However, during the interim, the farmer's share increased to a high of 46 percent in 1973--the highest level in 20 years. This increase reflected an extraordinarily large increase in commodity prices stemming from reduced world food supplies and strong demand. Prices received by farmers have declined relative to foodstore prices during the past 3 years, and consequently, the farm share has declined. Although the farm share statistic by itself is not a measure of farmers' economic well-being, it has been accompanied by a leveling off of farm income during the past few years (fig. 2).

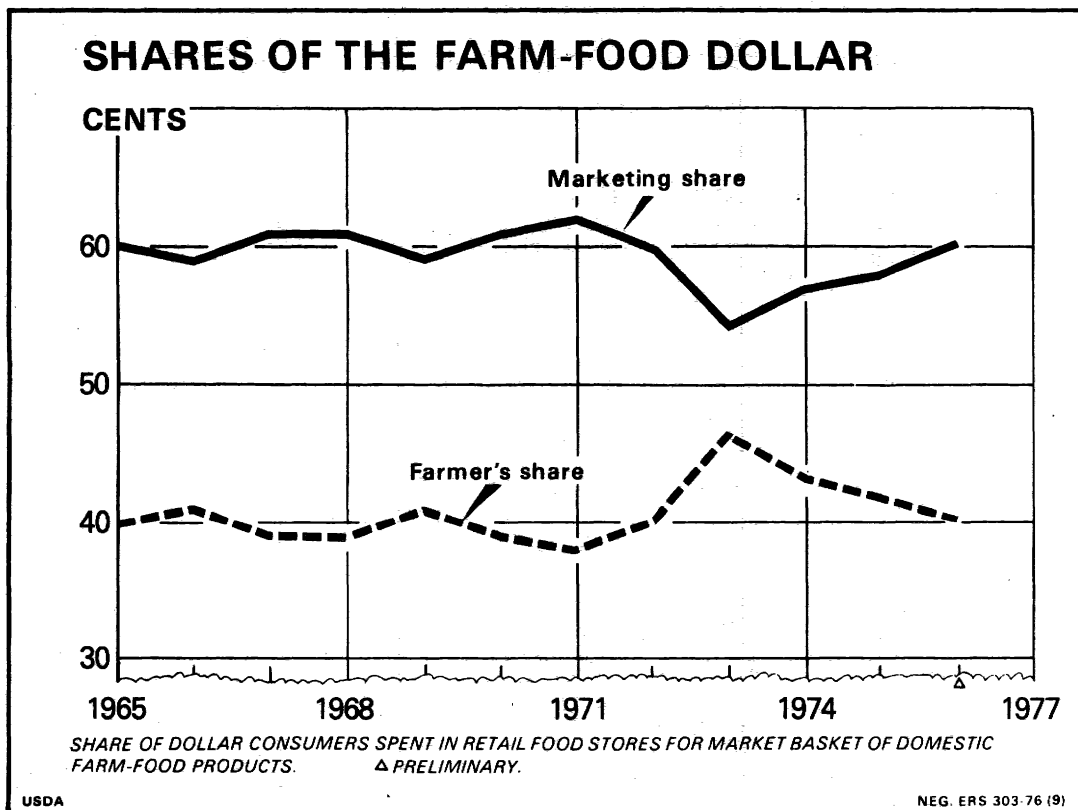


Figure 2

COMPONENTS OF FARM-RETAIL PRICE SPREADS

Farm-retail price spreads represent the charges for all functions required in processing and marketing products after they leave the farm until they are purchased by consumers. Therefore, to better understand why farm-retail spreads have been widening and where the food dollar has been going, margins and costs were estimated for 16 leading farm food items, including beef, eggs, milk, and bread (table 2 and fig. 3). The items studied were chosen because of their importance in the food budget, and because they represent foods that have widely different marketing channels and costs. Latest estimates are for 1975 because more recent data are not complete. Similar estimates have been published for 1972-74 (10). This report contains a summary of the most recent findings. A separate report will be published to provide detailed data for individual foods.

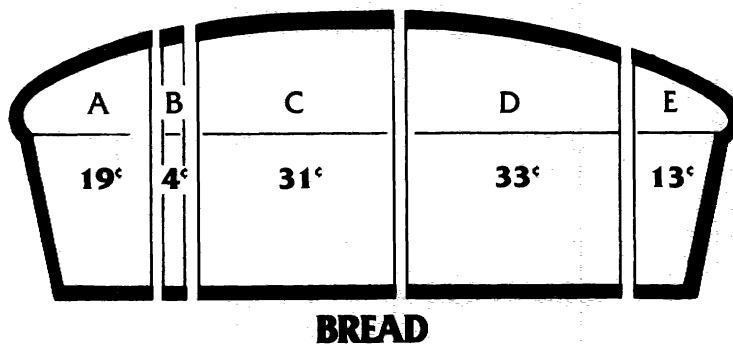
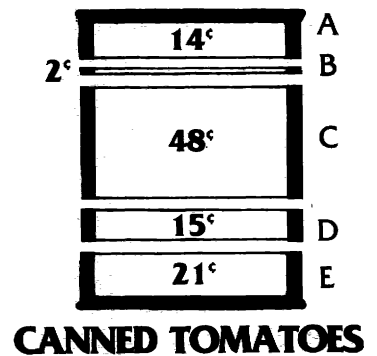
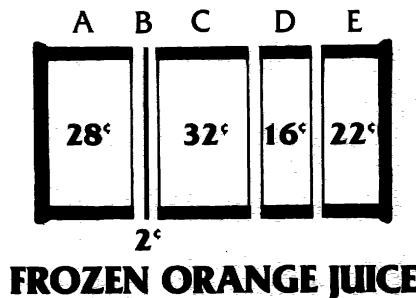
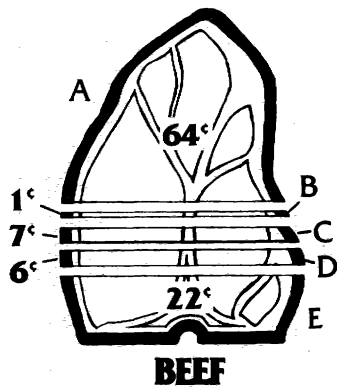
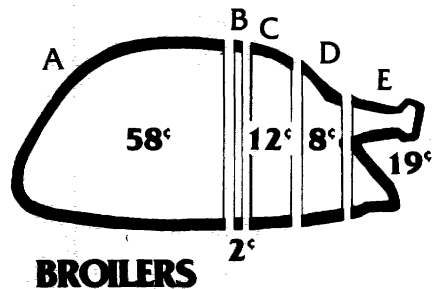
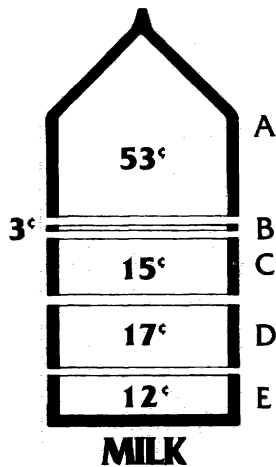
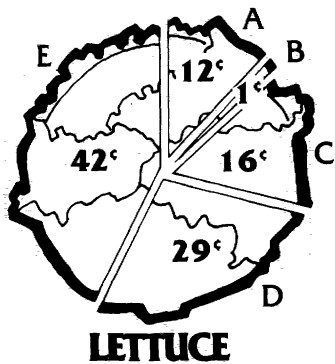
But for a few exceptions, the spread between farm value and retail prices of the 16 items are subdivided into 5 functions. These are (1) assembly and procurement, consisting largely of collecting products off farms; (2) processing or packing products for market; (3) intercity transportation of products from the processor or intermediate handler to retail markets; (4) wholesaling or warehousing; and (5) retailing. These components conform as nearly as possible to the functions occurring between the farm and the foodstore and not the firms performing the functions. For example, although many retailers perform wholesaling functions, there was an attempt to allocate firm cost data to the appropriate function.

The portion of the spread apportioned to each function was further allocated to 12 cost and profit components, including labor, packaging, business taxes, advertising, and energy. The major exception to this analysis is the wholesaling function: a lack of data has prevented the identification of the relative importance of specific cost components.

For most food commodities, the marketing process begins with the gathering or assembling of products from farmers at ~~some~~ local collection point, such as a grain elevator, livestock auction, packing shed, or processing plant. The assembly function, which usually consists of buying, transporting, and storing the products, costs the least of the principal marketing functions. Assembly costs usually average 2 to 3 percent of the retail price.

The more a commodity is changed from the time it leaves the farm until it reaches the consumer, the higher the processing costs, and usually the smaller the farmer's share. For instance, processing costs make up about one-half of the retail store price of catsup and canned tomatoes, and one-third of the retail price of frozen orange juice. Similarly, charges for bread processing, which involves milling wheat and making, baking, slicing, and wrapping the bread, represent nearly a third of the retail price per loaf. In contrast, processing costs less than 15 percent of the retail price of beef and pork, broilers and eggs, and fluid milk -- all items which are changed relatively little after they leave the farm. Although fresh fruits and vegetables also are not altered very much after leaving the farm, costs for grading, containers, and packing ranged between 15 and 20 percent of the retail price.

WHAT THE FOOD DOLLAR PAYS FOR



A - PRODUCTION

B - ASSEMBLY

C - PROCESSING

D - WHOLESALING, TRANSPORTATION

E - RETAILING

ESTIMATES BASED ON 1975 PRICES, COSTS, AND MARGINS.

Figure 3

Table 2 --Distribution of retail price according to farm value and marketing function, 16 farm food products, 1975

Food item and retail unit	Farm value 1/	Marketing functions					Retail price
		Assembly and pro- curement	Process- ing	Intercity transpor- tation	Wholesale- ing	Retail- ing 2/	
				Cents			
Beef, Choice (pound)	92.9	1.7	9.6	2.1	6.5	32.2	146.0
Pork (pound)	86.9	1.9	13.6	2.2	5.8	24.6	135.0
Broilers (pound)	37.0	1.4	7.5	1.4	3.9	12.0	63.2
Eggs, grade A or AA large (dozen)	50.8	1.2	9.3	1.5	3.7	10.5	77.0
Milk, sold in stores (½ gallon)	41.2	2.8	11.4	3/	13.6	9.5	78.5
Butter (pound)	67.9	3.3	10.3	1.8	5.2	14.0	102.5
Oranges, Calif. (dozen)	32.5	2.0	17.3	14.3	10.3	57.5	133.9
Lettuce, Calif. (head)	5.4	.4	6.7	7.7	4.7	18.3	43.2
Potatoes (10-pound bag)	47.6	4/	20.6	17.9	7.7	65.4	159.2
Orange juice, frozen (6-oz. can)	7.9	.5	8.9	1.5	3.2	6.1	28.1
Tomatoes, Calif. (whole, no. 303 can)	4.8	.6	17.1	2.9	2.5	7.4	35.3
Tomato catsup, Calif. (14-oz. bot.)	7.0	.9	23.1	3.6	4.0	6.3	44.9
Bread, white (pound)	6.8	5/1.5	11.1	6/ .4	11.6	4.6	36.0
Margarine (pound)	21.1	.7	7/ 18.7	1.2	9.5	11.7	62.9
Salad and cooking oil (24-oz. bottle)	35.0	1.2	7/ 52.8	5.0	5.6	16.0	115.6
Vegetable shortening (3 pounds)	74.0	2.5	7/ 83.6	5.2	7.3	18.1	190.7

1/ The farm value is the gross return to farmers for the quantity of farm products equivalent to the unit sold at retail minus imputed value of byproducts. Because of losses from processing, waste, and spoilage, the farm value represents larger quantities than the retail unit. 2/ Instore costs only. Headquarters and warehousing expenses are included in wholesaling. 3/ Included in wholesaling. 4/ Included in farm value. 5/ Assembly of wheat and milling. 6/ Flour only. 7/ Includes oilseed crushing, crude oil refining, and manufacturing of finished product.

Transportation costs also are relatively high because of the perishability of items, and the long distances they must be shipped to market. Shipping costs for potatoes and California oranges were 11 percent of the retail price in 1975 and they were about 18 percent for lettuce. In contrast, shipping costs for meats, broilers, eggs, and butter, items all relatively high in value, accounted for only 2 percent of the retail price.

Labor and packaging material costs have accounted for half or more of processing costs for most items. In 1975, labor was the major cost for beef, pork, and broilers. Packaging materials cost more than labor for several products, including eggs, canned tomatoes, catsup, and frozen orange juice. Most other costs, such as business taxes, depreciation, repairs, and energy, usually make up less than 5 percent each of the total processing margin.

Charges for wholesaling, involving warehousing and local delivery to stores, have ranged between 5 and 8 percent of the retail selling price for most food products. Such costs for bread, normally delivered to stores by driver salespeople instead of moving through retailers' warehouses, made up one-fourth of the retail price in 1975. Wholesaling costs for milk were relatively high too because of high labor costs connected with the route driver's method of delivery.

Production, processing, transportation, and wholesale costs accounted for more than four-fifths of the consumer's food dollar. The remaining 17 percent represented retailing costs for a typical supermarket operation. Costs vary widely among the thousands of foods stocked, reflecting the amount of store handling of products, shelf space occupied, special equipment needs such as refrigeration, and rate of sales. Among the 16 products studied, the instore retailing margin ranged from 10 to 43 percent of the retail selling price. But such margins made up less than 25 percent of the retail price for the 16 items studied except fresh oranges, potatoes, and lettuce.

Although most departments of a typical supermarket are self-service,, many people are needed to operate a store, including checkers, meat cutters, produce clerks, and store managers. Labor costs represented about half of the store's margin, and from 40 to 60 percent of the margins for individual items. All other retailing costs were smaller. Rent represented around 7 percent of the store margin. Most supermarkets lease the building and land because of the high cost of buying property and the difficulty of acquiring capital. Electricity and other energy, packaging, and advertising costs were about 5 percent each of the retail margin. Profits before taxes for a typical supermarket were around 7 percent of the instore margin, or about 1.2 cents of each sales dollar in 1975.

MARKETING COSTS

The upward trend in the farm-retail price spread was largely due to inflation in the costs of goods and services used in marketing food products. Historically, the trend in price spreads has tended to follow rather closely the movements in the general price level. This relationship is not surprising

since operating inputs of food marketing firms are representative of a broad range of goods and services.

Substantial cost increases have occurred for nearly every input used by the food industry during the past several years. This has been especially true for energy-related items, such as food packaging materials, transportation services, as well as fuel and electricity. Between 1973 and 1976, wholesale prices of food containers and packaging materials rose about 50 percent. Railroad transportation rates rose 44 percent. Fuel prices and electric rates, which rose almost 50 percent during the oil crisis in 1974, have nearly doubled during the past 3 years. A more moderate increase of about 25 percent occurred in rents, property insurance, telephone, and other services that are not as affected by energy costs (table 3).

Although packaging and transportation have increased food marketing costs, the major operating expense for retailers and processors has been labor, which about equals all other costs combined. Labor represents a growing proportion of total costs for most marketing agencies. Over the past decade, labor costs for food retailers and processors have swelled from about two-fifths of total expenses to about half. In wholesaling, labor has remained a fairly steady portion of about 43 percent. This stability was probably made possible by consolidating the industry into fewer, larger, and more efficient facilities; the transfer of some wholesaling functions to retailers; and increases in order sizes as supermarkets became larger.

Average hourly earnings of workers in food industries have risen at an annual rate of about 9 percent during the past 3 years--slightly greater than the rise in average hourly earnings for all private nonfarm workers. Over the 3-year period from 1973 to 1976, increases in earnings of food marketing workers amounted to 30 percent, compared with 24 percent for all nonagricultural workers. This difference could be the result of many factors, including the ability of industries to pass on wage increases and the extent of unemployment among industries. Unemployment in the retail food trade has been well below the national average and total employment in the industry has increased since 1973. These factors probably contributed to favorable conditions for wage negotiations.

Labor costs per unit of food marketed for all food marketing firms combined have nearly doubled during the past 15 years. Food processors have been better able to control labor costs than food distributors which are more labor intensive. Unit labor costs of wholesalers and retailers more than doubled while they rose about 50 percent for food processors. The main reason for this difference is that food processors have been more successful than food distributors in reducing labor by mechanization and automation.

Between 1967 and 1974, processors reduced their labor per unit of output by 17 percent. Wholesalers were also able to reduce labor needed per unit output by 3 percent, but foodstores increased labor use per unit by 3 percent. Eating places had the largest increase in man-hours of labor used per unit of output--about 8 percent.

Table 3 --Prices of inputs bought by food marketing firms, annual 1970-76, quarterly 1976

Year and quarter	Intermediate goods and services <u>1/</u>				
	Goods				
	Total	Total	Containers and packaging materials	Fuel, power, and light	Services <u>2/</u>
			1967 = 100		
1970	113	108	108	108	120
1971	120	113	113	120	129
1972	126	118	117	126	138
1973	134	125	123	138	145
1974	159	161	151	202	157
1975	180	186	174	237	172
1976 <u>3/</u>	194	201	189	258	186
<u>1976</u>					
I	186	192	179	243	179
II	191	197	185	252	184
III	194	199	185	260	188
IV	206	217	207	278	191

Year and quarter	Hourly <u>4/</u> earnings of employees	Railroad freight rates <u>5/</u>	New plant and equipment <u>6/</u>	Interest rates <u>7/</u>	Bond yields <u>8/</u>
	Dollars	1969=100	1972=100	Percent	Percent
1970	3.03	109	91	8.48	8.04
1971	3.24	122	96	6.32	7.39
1972	3.45	126	100	5.82	7.21
1973	3.66	129	104	8.30	7.44
1974	3.99	149	116	11.28	8.57
1975	4.40	169	132	8.65	8.83
1976 <u>3/</u>	4.77	185	138	7.52	8.43
<u>1976</u>					
I	4.65	179	136	7.54	8.56
II	4.74	185	138	7.44	8.53
III	4.81	186	139	7.80	8.46
IV	4.90	189	140	7.28	8.18

1/ Represents all goods except raw materials and plant and equipment, and all services except those performed by employees, calculated from wholesale price relatives. 2/ Rent, property insurance and maintenance, and telephone. 3/ Preliminary. 4/ Weighted composite of production employees in food manufacturing and non supervisory employees in wholesale and retail trade, calculated from data of the Department of Labor. 5/ For food products compiled from data of the U.S. Department of Labor. 6/ GNP implicit price deflator for investment in non-residential structures and producer's durable equipment. U.S. Department of Commerce. 7/ Bank rates on short-term business loans in 35 centers, U.S. Department of Commerce. 8/ Aaa corporate bonds; Moody's Investor Service. These yields indicate the cost of current long-term borrowings.

An easing of inflationary pressures within the economy slowed the rise in costs of some marketing inputs in 1976. Prices of intermediate goods and services purchased by food marketing firms were up about 8 percent from a year earlier, compared with a 13-percent increase in 1975 over 1974. Prices of food containers and packaging materials and energy rates rose 9 percent in 1976, about half the rate of a year earlier. Costs of borrowed funds also dropped appreciably as short-term interest rates declined to 7.5 percent from 8.6 percent in 1975. Interest rates on long-term bonds also edged lower in 1976, reducing the cost of capital financing. Moreover, purchase costs for new plant and equipment increased only 4 percent in 1976, compared with a 14-percent boost in 1975.

Transportation costs by rail continued to rise sharply last year, averaging about 10 percent higher than in 1975. Higher rail rates have been granted by the ICC in response to rising operating costs and the continued weak financial condition of many rail lines.

Higher labor costs continued to be a major factor affecting marketing costs in 1976. Hourly earnings of food marketing employees advanced an average of 37 cents, or about 8½ percent, compared with 10 percent the year before. Another indication of the trend in wages is shown by the terms of contracts negotiated within the unionized sector of the economy. Although unionized workers represent only about one of four U.S. workers, union wage developments often affect wages of other workers. This results in part from the extension of provisions of contracts to other workers in the same company, and the setting of wages by nonunion employees based on wage surveys (3).

Most major collective bargaining settlements reached in 1976, which included several in the food industry, provided for smaller wage increases than the contracts negotiated in 1975. According to Department of Labor information for all industries, wage rate adjustments negotiated during the first 9 months of 1976 averaged 8.9 percent for the first year and 7.0 percent annually thereafter over the life of the contract. These rates are about 1 percent lower than comparable figures for 1975. However, some contracts have cost-of-living escalator clauses which could result in larger increases in wages (12).

PRODUCTIVITY

Productivity represents the quantity of output obtainable from a given amount of input, such as labor. Greater productivity, therefore, may counter the effects of rising costs of inputs on costs per unit of output and on prices. However, there have been very small gains in productivity in recent years, in part because of the sluggish economy and reduced food production in 1972 and 1974.

A recent study was made by ERS of labor productivity changes in the food and fiber system (5). The system consists of all industries involved in producing agricultural products, including farming, suppliers of inputs needed in production, and the marketing sector. The study revealed that the quantity of labor used in the food and fiber system declined 14 percent between 1958 and 1974, largely reflecting a steady decline in farm labor. The marketing sector showed very little change in the use of labor over the entire 17-year period.

Labor use was estimated to have remained at slightly over 11 billion man-hours, or the equivalent of 5.5 to 6.0 million workers. Although labor used in the food and fiber system declined between 1958 and 1974, the volume of output increased 42 percent. Thus, labor productivity rose 61 percent, or an annual rate of 3.2 percent. The growth rate, however, was not constant. Labor productivity increased rapidly from 1958 to 1966, but greatly slowed thereafter. Practically no gain occurred in 1973 and 1974, mainly reflecting the drop in food output.

Among the sectors of the food and fiber system, the farming sector has been the leader in productivity gains. But during the seventies, farm production per man-hour of labor slowed as crop production per acre fell below longer-term trends. However, in 1975, labor productivity in farming made a big jump of 7 percent, as the result of increased output and a reduction in use of labor on farms.

In marketing, food manufacturing industries have shown the largest gains in productivity, but an irregular growth in output and a wide variation among industries have held the annual increase to about 2 percent. In contrast, labor productivity in food retailing appears to have been declining. Figures compiled by the Super Market Institute, an industry association, indicate that sales per man-hour of food retailers, after removing of the inflation factor, declined each year from 1971 to 1974 before posting a gain of 4.5 percent in 1975. Similarly, sales per square foot of selling area, which measure how efficiently facilities are being used, declined every year since 1971, due largely to an overexpansion of store facilities (9).

As a result of small productivity gains and rising wages, labor costs per unit of output seemed to have risen nearly as much and perhaps more than wages, in part because wages account for only a portion of total labor costs. Wages account for the largest share of labor cost, but fringe benefit costs have been rising at nearly twice the rate of wages and have become an increasingly larger share of labor costs. For instance, a report issued by the Council on Wage and Price Stability revealed that fringe benefit costs in the meatpacking industry increased from 27 percent of total labor costs in 1970 to 33 percent in 1975 (3).

Industry productivity estimates are not yet available for 1976. But data for the economy show greater productivity gains occurred last year than in recent years, mainly as a result of the continuation of the economic recovery. Productivity in the total private business sector rose each quarter during the year as output rose faster than hours of labor used. Productivity gains for all of 1976 rose by 4.5 percent. Owing to the larger productivity gain, unit labor costs and prices rose much more slowly during 1976 than in other recent years.

PROFITS

Profits in food marketing are often viewed with suspicion as with other fields of economic activity, and are thought of as something that can be reduced or eliminated without any affect on an industry. However, profits are necessary

for companies in an industry to acquire and attract capital for maintenance and growth. Moreover, profits provide the incentive for companies to increase efficiency and provide a better product than competitors.

Food retailers usually present their earnings on the basis of percentage of sales. This permits dollar profits to appear small, but profits expressed as a percentage of sales are probably more meaningful for consumers because these profits can be related to the consumer's grocery bill.

Historically, food retailers have earned slightly less than 1 percent profit after taxes per dollar of sales. In contrast, profits of food manufacturers average around 3 percent of sales. The rate of profit on sales largely reflects the frequency of inventory turnover, or the number of times the inventory is sold each year. Supermarkets turn over their inventory 15 to 20 times each year, much more frequently than food processors. Although the profit on each sale is less for food retailers, there is a greater flow of products. In a year's time, the profit from each sale adds up to a total return on money invested similar to other retail businesses.

For the purpose of evaluating industry performance, profits as a percentage of stockholders' investment is the best measure since it can be more directly compared to other industries or financial investments. Return on equity in food retailing has averaged between 10 and 11 percent most years, but there has been considerable variation among companies. Profit rates in food manufacturing have been about a fifth higher than for food chains.

Food retailers' profits were severely depressed during much of the 1972-74 period when economic controls were in force and inflation was at its worst. Industry profit rates fell to one half of their historical average during this period. They returned to near their historical level in 1975 as the economy moved out of the recession. In the first 9 months of 1976, the Federal Trade Commission (FTC) reported that profits of large food chains averaged 0.7 percent of sales and 9.2 percent of stockholders' equity (table 4).

Food manufacturers' profit rates have not been as variable as food retailers' profits, and have shown an upward trend. Data compiled by the FTC revealed that food manufacturers' profits averaged nearly 3.6 percent of sales for the first 9 months of 1976--the highest level in several years (table 5). As a percent of stockholders' equity, profits averaged 15.5 percent during the same period compared with 14.4 percent a year earlier. Contributing to the increase in earnings was lower raw material costs. Some gain may also have come from the nonfood operations of large, diversified companies. Returns on stockholders' equity in food manufacturing have exceeded the level of profitability for all manufacturing industries during the past 2 years.

Despite the somewhat higher earnings performance of food retailers and processors, profits were small relative to labor and other costs. This fact, therefore, explains only a small part of the rise in farm-retail spreads and food costs.

Table 4--Financial data for food chains, quarterly 1974-76

Period	Sales	Net profit after taxes	Stockholders' equity	Profit to sales	Profit to equity
	Millions of dollars			Percent	
1974					
III	14,223	129	4,425	0.9	11.7
IV	14,230	139	4,582	1.0	12.1
1975					
I	14,357	-61	4,427	-.4	-5.5
II	14,523	118	4,494	.8	10.5
III	14,834	113	4,561	.8	9.9
IV	15,522	133	4,700	.9	11.3
1976					
I	15,393	86	4,759	.6	7.2
II	15,549	140	4,827	.9	11.6
III	15,679	107	4,820	.7	8.9
IV					

Source: Federal Trade Commission. The data are based on reports from all food retailing corporations having more than \$100 million in annual sales, at least 75 percent of which are derived from supermarket operations.

Table 5 --Financial data for food manufacturers, quarterly 1974-76

Period	Sales	Net profit after taxes	Stockholders' equity	Profit to sales	Profit to equity
	Millions of dollars			Percent	
1974					
I	36,806	979	31,668	2.7	12.4
II	38,499	1,038	32,461	2.7	12.8
III	40,725	1,313	34,109	3.2	15.4
IV	42,232	1,271	34,504	3.0	14.7
1975					
I	37,880	920	34,260	2.4	10.7
II	40,281	1,315	35,169	3.3	15.0
III	41,683	1,561	36,336	3.7	17.2
IV	42,247	1,358	37,315	3.2	14.6
1976					
I	41,062	1,263	38,031	3.1	13.3
II	43,131	1,595	39,064	3.7	16.3
III	44,122	1,695	40,339	3.8	16.8
IV					

Source: "Quarterly Financial Report," Federal Trade Commission. Data represent national aggregate estimates for corporations based on a sample of company reports.

COMMODITY HIGHLIGHTS

Beef and Pork

In 1976, retail prices for Choice fed beef dropped 7 cents per pound from 1975 and averaged \$1.39 for the year--about the same as 2 years earlier. Pork retail prices averaged \$1.34 per pound in 1976, slightly below 1975's prices. Lower retail prices reflected increased beef production throughout the year and a cyclical increase in pork production last fall (figures 4 and 5).

Beef retail prices trended irregularly lower throughout the year. They ranged from a high of \$1.49 per pound in January to a low of \$1.35 in October.

Retail pork prices continued near January levels through midyear, but then dropped sharply. Pork prices in November and December averaged about \$1.17 per pound, 27 cents less than at the beginning of the year.

During 1976, the gap between beef and pork prices widened as pork supplies increased and prices decreased relative to beef. In January, pork retail prices averaged 5 cents less than beef but, in December pork averaged nearly 22 cents per pound less than beef.

Prices for slaughter cattle and hogs in 1976 averaged well below year-earlier levels. Choice steer prices averaged \$38.60 per hundredweight for the year--about \$6 below 1975. Only in January and February were Choice steer prices higher than a year earlier; after March monthly prices dropped below prices in 1975 by increasing amounts until midsummer. In July, cattle prices averaged \$37.24 per hundredweight--\$13 below 1975. Cattle prices continued their downtrend falling to \$36.40 in September, then turned upward reaching \$39.37 by December--a level still \$6 less per hundredweight than at that point in 1975.

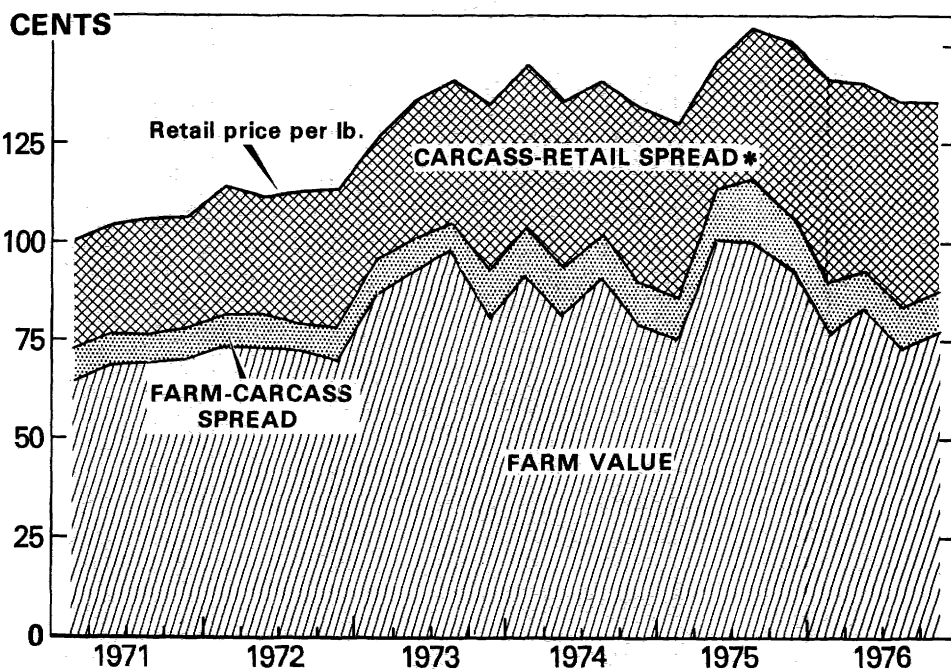
The net farm value of Choice beef (2.28 pounds of live steer equivalent to 1 pound of retail beef cuts) averaged 78 cents in 1976--15 cents less than in 1975. During midsummer, it averaged 30 cents below 1975.

Prices of barrows and gilts averaged \$43.83 per hundredweight in 1976--\$5 lower than a year earlier. Prices averaged between \$48 and \$49 per hundredweight the first half of the year, but declined to around \$32 in October and November.

Because the net farm values of beef and pork fell more than did retail meat prices in 1976, the farmers' share of the consumers' dollar spent for meat also dropped. For beef, the farmers' share dropped to 56 cents--8 cents less than in 1975. For pork, the farmers' share averaged 58 cents--7 cents less than a year earlier.

In 1976, farm-to-retail price spreads for both beef and pork widened 8 cents per retail pound from a year earlier after showing little change from 1974 to 1975. From 1973 to 1974, the spreads had increased 7 cents per pound for beef and 9 cents for pork.

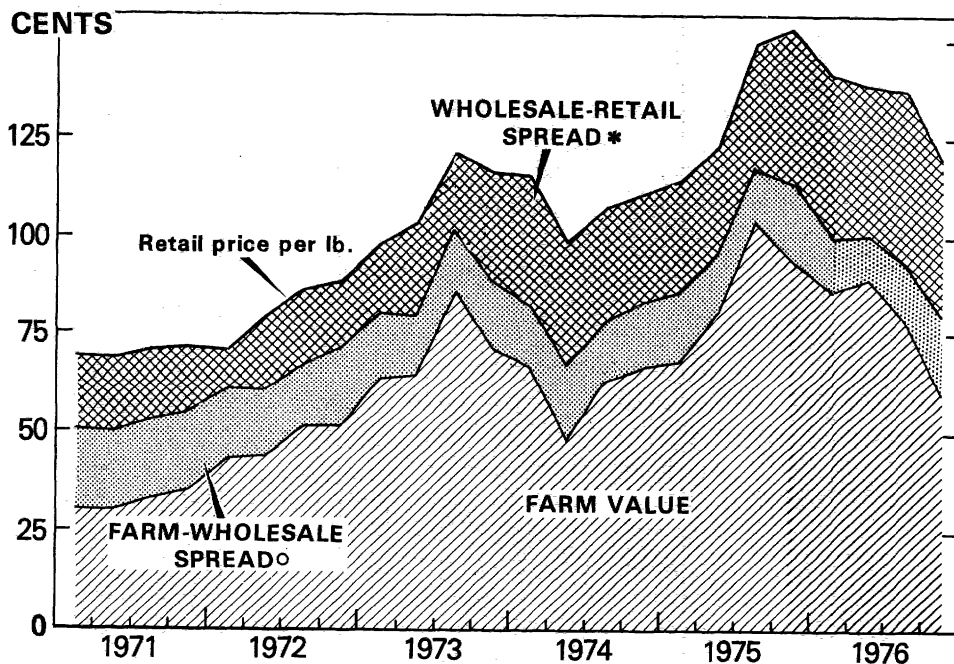
PRICE SPREADS FOR CHOICE BEEF



CHARGES FOR RETAILING, FABRICATING, WHOLESALING, AND IN-CITY TRANSPORTATION.
CHARGES FOR CATTLE MARKETING, SLAUGHTERING, AND TRANSPORTATION.

Figure 4

PRICE SPREADS FOR PORK



*CHARGES FOR IN-CITY DELIVERY, WHOLESALING, RETAILING.

°CHARGES FOR MARKETING, SLAUGHTERING, CURING, PROCESSING, AND TRANSPORTATION.

Figure 5

Table 6--Price spreads for beef and pork, annual 1971-76, quarterly 1976

Item	: Retail :	: Carcass	: Net :	Farm-retail spread			Farmer's share
	: price :	: value	: farm :	: Carcass-	: Farm-		
	: per	: value	: value	: Total :	: retail :	: carcass	
	: pound 1/:	: 2/	: 3/	:	: 4/	: 5/	
	Cents						Percent
<u>Beef, Choice grade</u>							
1971	: 104.3	75.7	67.8	36.5	28.6	7.9	65
1972	: 113.8	80.1	72.4	41.4	33.7	7.7	64
1973	: 135.5	98.1	89.9	45.6	37.4	8.2	66
1974	: 138.8	97.4	86.1	52.7	41.4	11.3	62
1975	: 146.0	105.5	92.9	53.1	40.5	12.6	64
1976	: 138.9	88.6	77.9	61.0	50.3	10.7	56
1976	:						
I	: 142.1	89.8	77.7	64.4	52.3	12.1	55
II	: 141.5	93.0	83.1	58.4	48.5	9.9	59
III	: 136.1	83.8	73.1	63.0	52.3	10.7	54
IV	: 136.0	88.0	77.8	58.2	48.0	10.2	57
<u>Pork</u>							
1971	: 70.3	52.1	32.3	38.0	18.2	19.8	46
1972	: 83.2	66.3	47.7	35.5	17.9	17.6	57
1973	: 109.8	87.3	71.5	38.3	22.5	15.8	65
1974	: 108.2	77.4	60.8	47.4	30.8	16.6	56
1975	: 135.0	103.8	86.9	48.1	31.2	16.9	64
1976	: 134.3	93.6	78.4	55.9	40.7	15.2	58
1976	:						
I	: 141.5	100.3	86.4	55.1	41.2	13.9	61
II	: 138.5	100.6	88.7	49.8	37.9	11.9	64
III	: 137.4	93.1	78.4	59.0	44.3	14.7	57
IV	: 119.8	80.2	60.5	59.3	39.6	19.7	50

1/ Composite monthly average prices of all cuts adjusted for volume sold at special prices derived from BLS and food chain prices. 2/ For a quantity equivalent to 1 pound retail cuts: beef, 1.41 pounds of carcass beef; pork, 1.07 pounds of wholesale cuts. 3/ Payment to farmers for quantity of live animal equivalent to 1 retail pound: Beef, 2.28 pounds and pork, 1.97 pounds minus byproduct allowance. 4/ Includes not only gross margin for retailing but also charges made for other marketing services such as fabricating, wholesaling, and in-city transportation. 5/ Measures charges made for livestock marketing, processing, and transporting to city where consumed.

Beef and pork price spreads fluctuated widely during the year because of lags in price adjustments at wholesale and retail levels to changes in livestock prices. For beef, the farm-retail spread dropped from 65 cents per pound in January to 55 cents per pound in April. The spread increased to 64 cents per pound in July, then dropped to 57 cents in November. For pork, the farm-retail spread dropped from 57 cents per pound in January to 49 cents in June. It rose to 67 cents in October, then dropped to 50 cents per pound in December.

Within the farm-to-retail price spread, the farm-carcass spread narrowed and the carcass-retail spread widened. Farm-carcass spreads averaged about 10 cents per retail pound for beef and 15.1 cents for pork--2 cents lower for beef and nearly 2 cents lower for pork than in 1975. The carcass-retail spreads widened in 1976 by 10 cents for beef and 8 cents for pork, averaging 50 cents per pound for beef and 39 cents for pork.

Eggs and Poultry

Price spreads for eggs, broilers, and turkeys remained relatively constant from the midfifties through the late sixties. This was largely due to efficiencies realized in performing various marketing functions. Since the late sixties increased costs for labor, containers, energy, and overhead have been large enough to more than offset any productivity gains in marketing efficiency. As a result, unit costs for performing various marketing functions have risen (8).

Egg and broiler producers enjoyed a profitable year in 1976 as red meat prices, particularly pork, tended to remain high relative to retail prices of broiler and eggs. Broiler prices were particularly good during the first 3 quarters of 1976, in spite of steadily increasing production, but declined during the last quarter. Because of declining prices in the fourth quarter, yearly profit margins from broilers were smaller than for 1975. Egg producers enjoyed good prices throughout 1976. Turkey prices were below the cost of production during much of the year as turkey producers responded to good prices during 1975 by overproducing in 1976.

Higher feed prices raised production costs in 1976, but feed costs did not get as high on the average as they had been during 1974. Other inputs such as fuel, labor, and transportation continued to increase in cost, pushing up the cost of marketing poultry and eggs over 1975 costs.

Eggs

Grade A large eggs, sold at retail in 12 major U.S. cities, averaged 83 cents per dozen during 1976--7 cents more than the average retail price during 1975.

The farm price of eggs averaged 54 cents per dozen during 1976, 5 cents more than during 1975. The farm to consumer margin was 29 cents per dozen, 2 cents more than in 1975. Twelve of the 29 cents went to the retailer--1 cent more

than in 1975. The remaining 17 cents in costs occurred between the farmer and the retailer, which also was 2 cents higher than in 1975.

The farmer's share of the consumers dollar spent for large eggs averaged 66 percent during 1976, up from 62 percent in 1975.

Frying Chickens

U.S. Grade A frying chickens sold at retail in 12 major U.S. cities averaged 61 cents per pound during 1976, 3 cents a pound less than during 1975.

The farm equivalent value of frying chicken averaged 31 cents per pound for the year, compared with 36 cents per pound in 1975. It reached a high of 35 cents per pound in July 1976, but fourth quarter prices were under 30 cents per pound.

The farm to consumer spread for frying chicken rose to 30 cents per pound, up 2 cents per pound from 1975. The farm to retailer margin increased 1 cent to 14 cents per pound, and the retail margin increased from 15 to 16 cents per pound.

The farmer's share of the consumer dollar spent for frying chicken averaged 51 percent during 1976, compared with 54 percent during 1975, and 56 percent during 1974.

Turkeys

According to BLS prices, medium turkeys (8 to 16 pounds) averaged 74 cents per pound in 12 major U.S. cities during October-December 1976--4 cents a pound less than the same period during 1975. The farm equivalent value averaged 38 cents per pound, a decrease of 8 cents per pound from 1975.

The farm to consumer margin averaged 36 cents per pound--4 cents higher than in 1975. The farm-to-retail component of the margin averaged 17 cents per pound for 1976, 1 cent lower than in 1975, but the retail margin averaged 19 cents per pound--4 cents higher per pound.

The farmer's share of the consumer dollar spent for medium turkeys averaged 51 percent, down from 55 percent during 1975.

Margins for turkeys may be somewhat overstated. One of the reasons is that BLS prices represented some branded and self-basting turkeys that often sell at a premium. Other prices used in computing the margins are based on USDA Grade A whole birds that are not self-basting or branded products. In addition, BLS prices are collected the first full week in the month prior to any heavy price specializing near the Thanksgiving and Christmas holidays. Recent research has indicated that with chain store specials on turkeys the week before Thanksgiving and the week before Christmas, prices were reduced an average of 10 to 11 cents per pound.

Milk

Prices of fresh milk sold in retail stores were very stable during 1976, varying less than 3 percent from the low in July to the high in October. Averaging 82.7 cents per half gallon, retail prices rose 4.2 cents over 1975, compared with only a 0.1 cent rise the previous year. The 1976 increase was considerably less than the 13-cent increase which occurred 2 years ago. Prices were higher than year-earlier levels throughout the year, but they declined from the October peak as dairy market conditions weakened to close the year at 83.3 cents--2.2 cents higher than at the end of 1975.

Farm prices of milk for fluid uses ran well above those of a year earlier during most of the year. The farm value per half gallon averaged 46.2 cents--5 cents higher than in 1975. However, declining prices late in the year, coupled with sharply increasing prices late in 1975, left the December farm value 1 percent lower than the previous December. The farm-retail spread narrowed slightly in 1976, the second consecutive yearly decline, following a very large increase in 1974.

Milk production in 1976 was up about 4 percent from 1975 and was the largest annual production since 1965. Production throughout the year was higher than year-earlier levels with the rate of gain peaking in September and then slowing during the fourth quarter of the year.

Fluid milk sales remained strong last year as consumers apparently responded to the relatively stable retail prices. Strong sales of dairy products and the rebuilding of depleted stocks of manufactured dairy products both helped to absorb the large increases in milk production resulting in prices well above the price support level for the most of the year. However, late in the year stocks of dairy products had been rebuilt, milk production exceeded demand, market conditions weakened, and the Commodity Credit Corporation (CCC) began purchasing sizable quantities of butter and cheese under the price support program after having purchased only nonfat dry milk for most of the year.

Butter

The average retail price of butter rose to an estimated \$1.26 per pound in 1976--24 cents over 1975. This is the largest year-to-year price increase on record, even surpassing the jump in 1946 when World War II price controls were lifted. The price of margarine, butter's chief substitute, declined in 1976 and the price differential between the two products nearly doubled to 73 cents.

Per capita consumption of butter, which had increased slightly in 1975, declined to an estimated 4.3 pounds in 1976--10 percent below the previous year. Although butter consumption declined, total consumption of table fats increased 0.3 pound as the per capita consumption of margarine went up about 7 percent to 12.0 pounds.

Wholesale prices were above the CCC's support purchase price during most of the year. Most butter produced moved into commercial channels until late in the year when the supply would not clear the market and it became necessary for the CCC to purchase butter.

The record increase in prices was due largely to a strong demand for cheese and other dairy products that pulled milk away from butter production. Butter production last year lagged below 1975 until July, although milk production was 3.3 percent higher. But from July on, butter production was above the previous year as milk production increased by 5.4 percent. For the year, butter production was about the same as for 1975.

The farm-retail spread declined during the first part of the year as retail prices did not fully reflect the increases in the farm value of milk. But the spread increased sharply from September through December, and for the year averaged 44.8 cents per pound--9.6 cents more than in 1975.

Fruits and Vegetables

Retail prices increased for many fresh and processed fruits and vegetables in 1976, but price increases were generally smaller than in 1975. Higher retail prices were the result of widening farm-retail spreads, as the farm value dropped for most products. Wider marketing spreads were the result of continuing increases in labor, transportation, packaging, and energy costs.

Retail prices of fresh fruits increased about 1 percent overall in 1976 in spite of a 6-percent decline in farm value. Wider marketing spreads were evident for most fresh fruits. The farmer's share of the retail price of fresh fruits averaged 28 percent, down from 30 percent in 1975.

Retail prices of fresh vegetables averaged about 6 percent higher in 1976 than a year earlier, largely because of a substantial increase in potato prices. The retail price of potatoes averaged \$1.46 per 10-pound bag--about 9 percent more than in 1975. Higher potato prices were mainly due to a widening marketing spread. Overall, farm value of fresh vegetables increased about 2-percent in 1976 from 1975, but the farmer's share of the retail price dropped from 35 percent to 33 percent.

Retail prices of processed fruits and vegetables averaged only about 1 percent higher in 1976 than a year earlier, a substantially smaller increase than in 1975. A more moderate retail price rise in 1976 was the result of lower farm values for many items. Marketing spreads continued to widen. The farmer's share of the retail price of processed fruits and vegetables averaged 20 percent in 1976, compared with 21 percent in 1975.

A special study of trends in prices, costs, and margins for fresh California-Arizona oranges sold in New York City found that retail prices, wholesale and retail margins, and costs all trended upward during the 1965/66-1974/75 marketing seasons; but the California-Arizona growers' on-tree returns did not change significantly over the period (2). During the period, the retail value of navel oranges increased an average of 35 cents per 37.5-pound carton per season; the wholesale and retail margin rose 21 cents per carton per season;

rail transportation cost rose 6 cents; picking, hauling, packing, and selling costs increased 6 cents, and grower returns went up 2 cents. The retail value of Valencia oranges increased 26 cents per carton per season; the wholesale and retail margin went up 13 cents; transportation costs rose 7 cents; picking, hauling, packing and selling costs increased 7 cents; and grower returns dropped 1 cent.

The market shares, or percentage of the retail value going to growers and other market factors, fluctuated from season to season, but did not show any significant trend for either navel or Valencia oranges. For the 10 seasons, the wholesale and retail margin averaged 52 percent of the retail value for navel oranges and 51 percent for Valencia oranges. Transportation costs averaged 12 percent for navel and 13 percent for Valencia; picking, hauling, packing, and selling costs averaged 16 percent and 17 percent respectively; and grower returns averaged 20 percent and 19 percent, respectively.

White Pan Bread

The estimated average retail price of white pan bread in 1976 was 35.3 cents per pound, about 2 percent lower than the record annual average of 36.0 cents in 1975. A range of about one-half cent per pound loaf between the highest and the lowest average monthly prices was observed, the least variation in 3 years. Average retail prices have exhibited only moderate month-to-month changes since August 1975.

The farm value of all ingredients in bread decreased by 1.3 cents per pound, and the total value of 5.5 cents per pound was about 18 percent lower than in 1975. The farm value of wheat declined to 3.8 cents--the lowest level in four years. By the end of 1976, the farm value of wheat needed to produce a loaf of white pan bread was near the levels of the late sixties and early seventies although farm prices for wheat were higher at the end of 1976 than they were in the earlier years. However, in the earlier years, farmers received a payment of 75 cents per bushel on the portion of wheat used for domestic food purposes which boosted the effective farm price of wheat and farm value of wheat in a loaf of bread.

The farm-retail price spread continued to widen in 1976, increasing from an estimated 29.2 cents per pound to 29.8 cents. The percentage of the retail price represented by marketing services increased from 81 percent in 1975 to 84 percent of the retail price in 1976. The value of farm commodities declined from 19 percent in 1975 to 16 percent of the retail price in 1976. The largest increase in price spreads was 0.8 cent for baking, wholesaling, and retailing a pound of bread.

An unexplained development in 1976 was the continued increase in the wholesale price of bread reported by the BLS. Reported wholesale prices increased by 1 to 2 cents per pound. However, since the average retail price declined, the price spread at retail was squeezed. For 1976, the average price spread at retail was at the lowest level since the late fifties. Such a sudden decline in the price spread at retail does not seem reasonable. Accordingly, we have

grouped retailing with baking and distributing since there are no available data to determine the cause of this decline.

The average retail price for one pound of white pan bread is based upon the volume selling loaf in each retail outlet. This estimate could include bread baked and marketed by wholesale bakers, as well as private (supermarket) brands. The wholesale price, on the other hand, would be obtained from wholesale bakers. This situation enables several hypotheses to be postulated:

1. Consumers shifted their buying practices to the purchase of greater amounts of lower priced brands of bread. If this is the case, retail prices may not have declined for any wholesale brand of white pan bread, and the lower national average price would be caused by an increased market share for supermarket brands.
2. The prices of wholesale brands of white pan bread increased while the prices of supermarket brands declined. The lower U.S. average retail price would be caused by a greater decline in the price of supermarket brands than the increase in the price of wholesale brands reported by BLS.
3. Wholesale bakers increased list prices, but did not increase invoice prices. They were discounting from list prices to a greater than normal extent. Thus, the cost of bread to the retailer may not have increased and possibly may have declined.
4. Retailers did accept a smaller margin on bread than they have at any time in nearly two decades.

More hypotheses to explain this phenomenon could be postulated, but there are no data available to adequately evaluate any of them. It is impossible to determine whether this development was caused by inadequate data, a true shift in consumer purchasing practices, or a change in pricing practices and policies. More information will be needed, and there is considerable uncertainty that it will be possible to acquire the information needed for an adequate evaluation of this phenomenon.

In summary, 1976 saw a return to a reasonable degree of stability in the average retail price of white pan bread. The farm value of ingredients declined by a greater amount than the decline in the retail price. Reported wholesale prices continued to increase while the estimated cost of ingredients declined.

Vegetable Oil Products

Margarine, cooking and salad oil, and shortening are the principal food products made from the oils obtained from soybeans, cottonseed, and corn. Soybean oil is the leading oil or fat used in the manufacture of these products. In 1976 soybean oil accounted for about four-fifths of the fats and oils used in making margarine and cooking and salad oil, and about 60 percent for shortening. These proportions changed only slightly from the previous

year even though 12 percent more soybean oil was used in these oil products in 1976.

The U.S. per capita consumption of food fats and oils totaled 56 pounds in 1976, a new record high, and 4 pounds above the previous year. Shortening, margarine, and cooking and salad oils use was up sharply, more than offsetting declines in butter and lard.

This increased consumption was due primarily to the general economic recovery. Soybean oil had record high use due partly to smaller supplies of lard, cottonseed oil, and relatively low soybean oil prices. This record soybean use occurred despite record large imports of palm and coconut oils.

Retail prices of fats and oils products averaged 5 to 10 percent lower in 1976 than in 1975 accompanied by decreases in marketing spreads. For instance, the price of margarine averaged 53 cents per pound last year, about 10 cents lower than for 1975. Correspondingly, the farm value of the oil and a small amount of dry milk solids used to make margarine declined to 16 cents, slightly less than 5 cents below a year earlier level. Thus, the farm-retail price spread dropped over 5 cents from last year's record, averaging 36 cents per pound in 1976.

Soybean oil prices declined sharply to about 16 cents a pound by the end of 1975. Therefore, food oil prices started 1976 at relatively low levels, reflecting record large supplies of soybean oil resulting from the very large soybean crop. There was little change in soybean oil prices for the January through May period. Soybean oil prices started to rise in June and reached about 22 cents a pound in November. The higher soybean oil prices reflect continued strong demand for oil and the prospect of little change in soybean oil supplies for 1976/77. Most of the relatively low oil prices in the first part of 1976 were passed on to consumers as retail prices of oil products continued to drop each month until September. Retail prices of margarine dropped about 6 cents a pound from January through August; then increased slightly.

During the 1973-75 period, there were rapid food price increases, with the prices of fats and oils products rising around 90 percent. In 1976, a dramatic change took place with retail prices of fats and oils products declining about 17 percent. Farm to retail marketing spreads declined about 15 percent from 1975, and farm values of ingredients were about 23 percent below the previous year. However, farmers' costs of production and manufacturers' costs of making oil products continued to rise, thus putting downward pressure on returns to both farmers and manufacturers compared to returns in 1975. Because farm product values decreased relatively more than marketing spreads, the farmer's share of the retail cost of fats and oils products dropped about 2 percentage points to 32 percent, the lowest level in the past 4 years.

THE MARKETING BILL

Consumers spent an estimated \$164 billion for foods originating on U.S. farms in 1976. When they left the farm, these foods had a value of \$54 billion. The difference of \$110 billion represents an estimate of the total marketing bill, or sum of charges made by various marketing agencies for transporting, processing, and distributing farm foods (table 7 and fig. 6).

The concept of the marketing bill provides a quantitative measure of how much nonfarm activities affect the amount spent by consumers for food each year. It differs from the farm to retail price spread in that it is determined from the total quantities of foods bought by civilian consumers in a year, as well as average prices used to derive price spreads. The marketing bill data show the magnitude of food expenditures and marketing costs for different classes of food, away-from-home eating versus food purchased for use at-home, the economic contribution of different marketing functions, and the various costs and profits that make up the cost of food (4).

Consumer expenditures for farm foods were about 3 percent higher last year than in 1975, the smallest increase since 1971. Last year's increase reflects both higher consumption, particularly of beef and poultry, and higher prices, mainly for restaurant meals and snacks. Consumption of beef rose about 7 percent last year to a record amount of 129 pounds (carcass weight) per person. Per capita consumption of edible food fats also reached a new high, mainly reflecting larger supplies and lower prices for vegetable oils.

Meat products have represented by far the largest share of both consumer food expenditures and farm value. The farm value of meat is usually slightly more than a third of the total, compared with about a fifth for dairy products, the next largest group. Consumer expenditures for meat usually account for about a fourth of the total, compared with about a fifth for the next most important group, fruits and vegetables. Because the consumption of foods changes slowly, there has been little change in the proportion of expenditures and farm value accounted for by meat products and other major food groups from year to year.

The total marketing bill for farm foods last year of \$110 billion was around 6 percent greater than in 1975. The increase was the smallest in several years reflecting lower rates of increase in prices of some inputs, and fixed costs per unit of output. The marketing bill accounted for about \$2 out of every \$3 spent for farm foods last year--roughly the same proportion as in past years.

The marketing bill was largest for fruits and vegetables and meat products in 1976, with each accounting for about one-fourth of the total bill. Marketing charges were the third highest for bakery products, accounting for 15 percent of the total marketing bill. The only major food group for which the marketing bill was smaller than the farm value was poultry and eggs. Moreover, poultry and eggs accounted for only 5 percent of the total marketing bill, but about 12 percent of total farm value of foods.

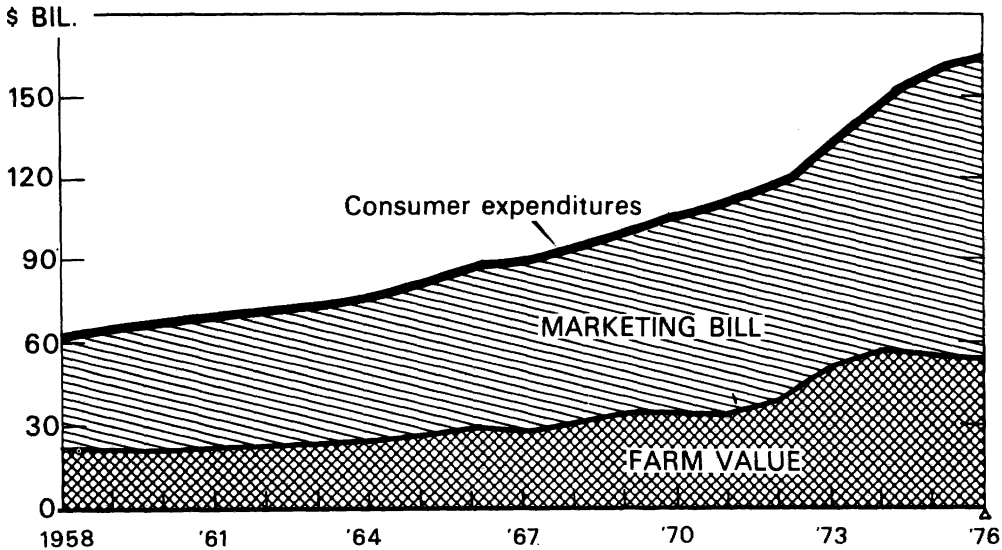
The marketing bill is the sum of charges made by various agencies or groups of firms including processors, wholesalers, retailers, and public eating places.

Table 7-- Consumers expenditures, marketing bill, and farm value for U.S.
farm foods, 1966-76

Year.	:	:	:	Away-from-home		
				Total	Public eating	Institutions
	:	:	:	places 3/	:	4/
<hr/>						
Consumer expenditures						
<hr/>						
Billion dollars						
1966	:	86.9	64.0	22.9	17.8	5.1
1967	:	89.3	64.3	25.0	19.3	5.7
1968	:	94.0	67.4	25.6	20.5	6.1
1969	:	98.8	70.3	28.5	21.9	6.6
1970	:	105.9	74.5	31.4	23.8	7.6
1971	:	110.7	77.6	33.1	25.0	8.1
1972	:	117.8	82.8	35.0	26.9	8.1
1973	:	133.6	95.3	38.3	29.4	8.9
1974	:	149.3	108.1	41.2	32.3	8.9
1975	:	159.0	112.1	46.9	36.4	10.5
1976 1/	:	164.2	114.1	50.1	39.3	10.8
<hr/>						
Marketing bill						
1966	:	57.1	39.8	17.3	13.5	3.8
1967	:	60.8	40.9	19.9	15.3	4.6
1968	:	63.6	42.5	21.1	16.2	4.9
1969	:	65.2	42.2	23.0	17.6	5.4
1970	:	71.1	46.1	25.0	18.8	6.2
1971	:	75.4	48.7	26.7	19.9	6.8
1972	:	78.5	50.8	27.7	21.1	6.6
1973	:	82.5	53.5	29.0	22.0	7.0
1974	:	93.3	62.1	31.2	24.3	6.9
1975	:	103.7	68.9	34.8	26.8	8.0
1976 1/	:	109.9	73.3	36.6	28.5	8.1
<hr/>						
Farm value						
1966	:	29.8	24.2	5.6	4.3	1.3
1967	:	28.5	23.4	5.1	4.0	1.1
1968	:	30.4	24.9	5.5	4.3	1.2
1969	:	33.6	28.1	5.5	4.3	1.2
1970	:	34.8	28.4	6.4	5.0	1.4
1971	:	35.3	28.9	6.4	5.1	1.3
1972	:	39.3	32.0	7.3	5.8	1.5
1973	:	51.1	41.8	9.3	7.4	1.9
1974	:	56.0	46.0	10.0	8.0	2.0
1975	:	55.3	43.2	12.1	9.6	2.5
1976 1/	:	54.3	40.8	13.5	10.8	2.7

1/ Preliminary. 2/ Includes food consumed from the home food supply (primarily purchased from retail foodstores). 3/ Includes restaurants, cafeterias, snack bars, and other eating establishments. 4/ Includes the value of food served in hospitals, schools, colleges, rest homes and nursing homes, and other institutions.

FARM-FOOD MARKETING BILL AND CONSUMER EXPENDITURES



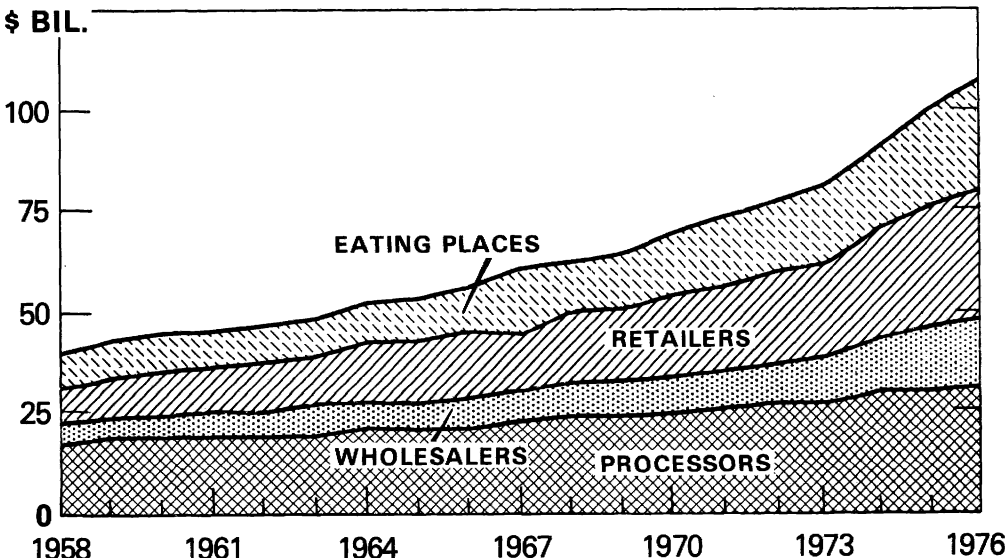
FOR DOMESTIC FARM FOODS PURCHASED BY CIVILIAN CONSUMERS FOR CONSUMPTION BOTH AT HOME AND AWAY FROM HOME. ▲PRELIMINARY.

USDA

NEG. ERS 961-77(2)

Figure 6

AGENCY COMPONENTS OF THE MARKETING BILL



USDA

NEG. ERS 960-77 (2)

Figure 7

Over the past 10 years, processors' costs as a proportion of the marketing bill have declined slightly while those of distributors have increased. This is due in part to the fact that processors are more capital intensive, which has enabled them to increase productivity more than food distributors. During the past 2 years, the cost of marketing functions performed by retailers surpassed the cost of processing functions. The retailer's function accounts for 30 percent of the marketing bill, slightly more than the processor's share, which includes costs of the intercity transportation function. Restaurants and other away-from-home eating places make up about one-fourth of the bill. Food wholesalers and assemblers perform functions that add up to the remaining 15 percent of the total marketing bill (fig. 7).

In the past several years, foods purchased in retail foodstores for use at home have accounted for slightly more than 70 percent of total food expenditures. The remaining 30 percent was spent by or for consumers in public eating places and institutions. Because of the additional services involved in food preparation and services, marketing costs have accounted for a larger proportion of food expenditures in eating places than of food purchases in retail food stores. The latest data for 1975 show that marketing charges represented 74 percent of the \$46.9 billion spent for food away from home versus 61 percent for food bought in retail stores for consumption at home.

Between 1972 and 1975, expenditures for food away from home, which had been growing faster than retail store products, rose at a slower rate than grocery store expenditures. Last year, expenditures for away-from-home food probably rose by a larger percentage than foodstore purchases because of a substantially larger increase in restaurant meal prices than in grocery store prices. From 1972 to 1975, prices of meals eaten away from home increased at a slower rate than grocery store prices. Eating places may have been reluctant to raise prices, even though costs were rising, because of the higher elasticity of demand for restaurant meals and the possibility of loss of sales when prices rise.

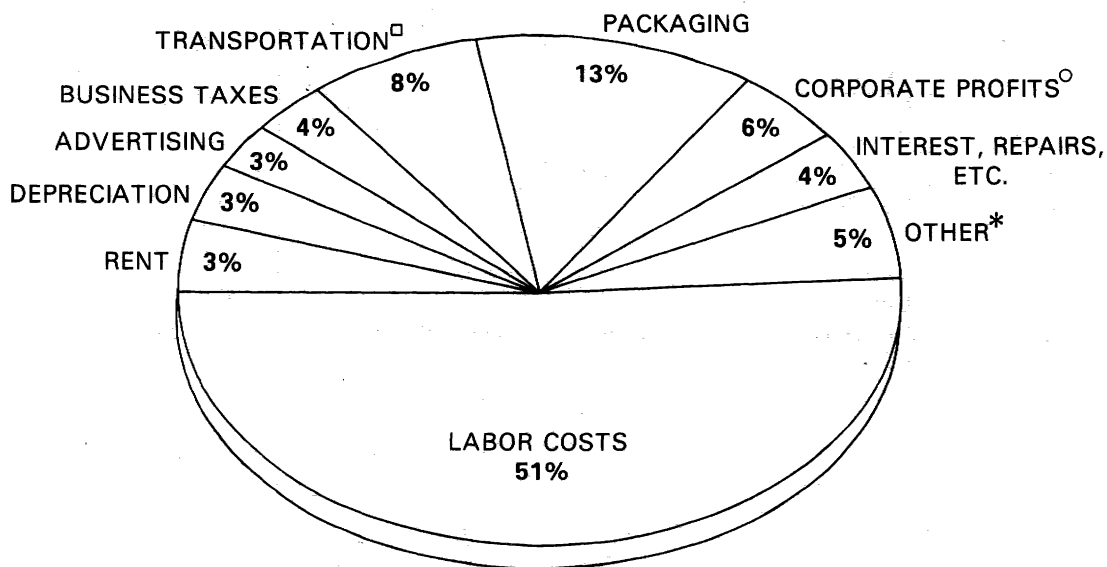
Labor

Labor is the largest cost of marketing farm foods, accounting for around half of the marketing bill (fig. 8). Labor costs have risen at an average annual rate of more than 10 percent since 1970 because of rising wages and salaries, and a slight increase in the number of workers employed by the food industry.

Employment in food marketing amounted to nearly 6 million workers in 1975, compared with 5.4 million in 1970. Most of the increase in employment occurred in away-from-home eating establishments and retail foodstores. Because of this rise in employment, labor costs of retail food stores and public eating places have been rising faster than labor costs of food processors.

Among marketing agencies, labor cost is the smallest proportion of total operating costs for wholesalers and the largest share for away-from-home eating places. In 1975, wholesalers spent \$6.5 billion for labor, which

COMPONENTS OF BILL FOR MARKETING FARM FOODS, 1976 ^Δ



^{*}RESIDUAL INCLUDES SUCH COSTS AS UTILITIES, FUEL, PROMOTION, LOCAL FOR-HIRE TRANSPORTATION, INSURANCE.
[○]BEFORE TAXES. [□]INTERCITY RAIL AND TRUCK. ^ΔPRELIMINARY DATA.

USDA

NEG. ERS 8452-77 (2)

Figure 8

accounted for 38 percent of total wholesaling charges. In contrast, labor costs in eating places and institutions amounted to over \$15 billion, and three-fifths of their total costs. Labor costs of retail food stores and processors account for about half of their total costs.

Food Containers and Packaging

Food containers and packaging materials have been the second largest cost of food marketing, accounting for about 13 percent of the marketing bill. Food processors have accounted for more than four-fifths of all packaging materials used. They usually use around half the gross output of glass and metal containers, and one-fourth of all corrugated fiber boxes which are used to ship food products to wholesalers and other buyers.

Increases in prices have greatly increased the cost of food containers and packaging materials during the past 3 years. Since 1973, the cost has gone up from \$10 billion to about \$14 billion. As one of the fastest rising marketing costs, this cost constitutes a growing share of the marketing bill each year.

Capital Costs

Capital costs, including depreciation, rent, and interest, are relatively small costs of marketing individually, but together they make up more than 8 percent of total costs. These costs have been rising, but at a slower rate

than most other marketing costs, probably because capital expenditures and borrowings by firms were cut back as a result of very high interest rates and sagging demand during the recession.

Investment in new plant and equipment, however, is necessary to replace worn-out facilities, to increase capacity, and to take advantage of new technology. The food processing industry is currently investing about \$2 billion in new plant and equipment each year. ERS has estimated that net capital stocks (accumulated capital investments minus discards and depreciation) were over \$20 billion in the food processing industry in 1973, and have been growing at an average annual rate of 3.2 percent since the early sixties--much faster than the 1.2 percent growth rate in the fifties (7).

The ability of food firms to finance capital expenditures from both internal and external funds seemed to improve last year. Both long- and short-term interest rates declined and stock values rose, improving the opportunity for equity financing.

Transportation Costs

Intercity truck and rail transportation costs for farm foods amounted to \$9.6 billion in 1976, about 8 percent of the marketing bill. Costs were nearly 12 percent higher than in 1975, as result of higher rates and a 2 to 3 percent increase in the quantity of food marketed. Since 1973, the transportation component has added about \$3.5 billion to food costs.

Railroad freight rate increases for food products moderated during 1976 but averaged 9.8 percent higher than in 1975. This was the smallest rise in several years. Although increasing rates have raised food transportation costs, they do not seem to have increased the income of railroads. Data for 1976 are not yet available, but between 1973 and 1975, net railway operating income (gross profits) declined 46 percent.

Income has declined while rates have gone up, in part, because railroads have been losing business to trucks and barges and have been unable to increase productivity to offset rising costs. Productivity, as measured by tonnage originated per employee, has declined slightly since 1973 (a relatively good year because of record exports of grain), but has remained above 1970 levels.

A substantial portion of railroad operating costs are essentially fixed. Therefore, the marginal cost of adding a single car to a train is very small, but loss in revenue resulting from shippers reducing their use of railcars is relatively large. Between 1970 and 1975, the tonnage carried by railroads declined 6 percent while total operating expenses increased 36 percent. Wage costs, the largest expense, totaled \$5 billion in 1975, 34 percent above 1970. This increase, combined with reduced traffic volume, increased railroads' per-ton labor cost from \$3.74 per ton in 1970 to \$5.35 in 1975.

Energy Costs

Energy costs of food processors and retail food stores amounted to about \$3 billion or 3 percent of the marketing bill. This amount understates the total cost of energy in food marketing since it does not include energy costs connected with wholesaling, away-from-home food service, or for-hire transportation. Fuel costs of trucks and railroads are included in the transportation bill.

Although the total energy cost of food marketing has not been determined, the Federal Energy Administration has estimated that approximately 17 percent of U.S. energy requirements are related to the food system (6). This includes energy for direct production, marketing, and consumption of food, as well as energy consumed in the production of goods, supplies, and services necessary to operate the production and other sectors of the food system. Of the total food system energy requirements, about 15 percent is used in farming, 27 percent in food processing, 15 percent for transportation, 8 percent in wholesaling and retailing, and 35 percent in the storage and preparation of food in the home and away from home.

Energy requirements of the food system are generally higher than in many nonfood and service industries, according to a recent ERS study (13). Although energy charges range from 4 to 10 percent of the cost of consumer products, food and food-related products average about 8 percent. Thus, food costs are more likely to be affected by future increases in energy prices than many other products. Some of the increases in energy costs may be offset by improved efficiency in the use of energy. The FEA has been working with the food industry to improve energy conservation, and some industries have made progress in coping with rising costs. For example, from mid-1972 to mid-1975, the baking industry improved its energy efficiency (BTU/unit or output) by 2.7 percent while the meatpacking industry recorded a 7-percent improvement during this period.

Among food processing industries, total energy costs are largest for the meat products, dairy products, grain mill products, and canned and frozen foods industries, according to data reported in the 1972 Census of Manufacturers. Each of these four industries accounted for 13 to 15 percent of purchased fuels and electric energy by the food processing industry. Natural gas is the major source of energy in food processing, providing about half of total BTU requirements. However, electric energy, because it is more expensive than natural gas, accounts for nearly half of total energy costs in food processing.

Advertising Costs

Advertising expenditures by food processors and retailers generally account for about 3 percent of the marketing bill. Food processors typically account for half of advertising costs. Processors spend more heavily for network TV and magazines, while retailers rely more on newspapers and local TV advertising. Advertising costs have gone up more slowly than most other costs in recent years, partly because most prices have gone up faster than

advertising rates. In addition, there may have been some cutback in advertising in response to the slower rate of sales growth during the recession and to ease the pressure on margins and prices that caused consumers to buy fewer convenience foods and to switch to more basic products. For example, advertising costs of food chains declined from 1.8 percent of sales in 1972/73 to around 1.1 percent in 1975/76.

Corporate Profits

Profits earned before taxes by corporate firms from marketing farm food products represent between 6 and 7 percent of the total marketing bill. Of total dollar profits of \$6.7 billion in 1975, processors received about half, wholesalers and assemblers received about one-fourth, retailers, about one seventh, and eating places received the remainder. The large dollar profits of processors results, in part, from the fact that nearly all processors are corporations and therefore are included in the figure. In contrast, only about half the public eating place firms and probably three-fourths of the retail food firms are incorporated and hence accounted for in the profit data.

REFERENCES

- (1) Badger, Henry T.
Price Spreads for Farm Foods. PS-5 to PS-16, U.S. Dept. Agr., Econ. Res. Serv., monthly 1976.
- (2) Burns, Alfred J., and Joseph C. Podany
California-Arizona Fresh Oranges: Marketing Patterns, Prices, Costs, Margins and Grower Returns. ERS-638, U.S. Dept. Agr., Econ. Res. Serv., June 1976.
- (3) Council on Wage and Price Stability
1976 Collective Bargaining Negotiations: A Background Paper. Unnumbered. Jan. 1976.
- (4) Crawford, Terry L., and Andrew Wiser
"The Marketing Bill and Consumer Expenditures for U.S. Farm Foods," Agricultural Outlook, AO-14, U.S. Dept. Agr., Econ. Res. Serv., Sept. 1976.
- (5) Durost, Donald D., and James E. Kirkley
"Productivity Changes in the Food and Fiber System, 1958-74," Agr. Econ. Res., U.S. Dept. Agr., Econ. Res. Serv., Oct. 1976.
- (6) Federal Energy Administration, Industrial Programs Office
Energy Use in the Food System. Unnumbered. May 1976.
- (7) Handy, Charles R.
Processing Costs, Public Policy, and Food Prices. Speech presented at the 1976 Agricultural Industries and Rural Policy Forum, University of Illinois at Urbana-Champaign. U.S. Dept. Agr., Econ. Res. Serv., Mar. 1976.
- (8) Rogers, George B.
Price Spreads, Costs, and Productivity in Poultry and Egg Marketing, 1955-74. AER-326, U.S. Dept. Agr., Econ. Res. Serv., Feb. 1976.
- (9) Super Market Institute, Inc.
The Super Market Industry Speaks 1976. Unnumbered. Chicago, Ill., 1976.
- (10) U.S. Department of Agriculture, Economic Research Service
Cost Components of Farm-Retail Price Spreads for Selected Foods. AER-343, July 1976.
- (11) _____
Review and Evaluation of Price Spread Data for Foods. Unnumbered. Report of a task force jointly sponsored by the Economic Statistics Committee of the American Agricultural Economics Association and by the Economic Research Service, Jan. 1976.

- (12) U.S. Department of Labor
Major Collective Bargaining Settlements, First 9 Months 1976. USDL-76-1339, Oct. 22, 1976.
- (13) Van Arsdall, R. Thomas
"Energy Requirements in the U.S. Food System," Agricultural Outlook, AO-8, U.S. Dept. Agr., Econ. Res. Serv., Mar. 1976.